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Applicant: Chimitt et al. Application No.: 10/706,345

## Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

UNISYS

## **Listing of Claims:**

1. (Previously Presented) A method for processing input/output request packets (IRPs) directed to a Data Volume for providing a single logical storage device to users and applications of a computing system, the Data Volume having a meta-data extent and at least one data extent, wherein the meta-data extent and at least one data extent are Basic Volumes, and the method is implemented above a Basic Volume Manager, the method comprising the steps of:

intercepting an initial IRP before the IRP reaches a file system associated with the IRP;

evaluating the IRP by a first volume filter associated with the meta-data extent to determine the meta-data extent to handle the IRP;

directing the IRP by the first volume filter to the appropriate meta-data extent;

redirecting the IRP from the meta-data extent to a second volume filter associated with the at least one data extent associated with the meta-data extent;

returning a response to the initial IRP from the second volume filter associated with the at least one data extent;

wherein the meta-data extent is a first logical drive and the at least one data extent is a second logical drive;

the Data Volume appears as a single storage volume to the users and the applications; and

the meta-data extent comprises configuration information for use in setting up and maintaining the Data Volumes.

- 2. (Original) The method of claim 1 wherein the IRP is initiated by an originator of input/output (I/O).
- 3. (Original) The method of claim 2 wherein the originator of I/O is a Small Computer System Interface Target Mode Driver (SCSITMD).
- 4. (Original) The method of claim 1 wherein the meta-data extent is associated with a plurality of data extents.
- 5. (Original) The method of claim 4 wherein the plurality of data extents are located on a plurality of physical disks.

### 6. (Canceled)

7. (Previously presented) The method of claim 1 wherein the redirecting step includes creating additional IRPs by the volume filter, each additional IRP being derived from the initiated IRP and relating to a single data extent.

#### 8. (Canceled)

9. (Previously presented) A method for storing data across at least one physical disk and presenting the data as a single virtual disk comprising the steps of:

intercepting a first input/output request packet (IRP) from an originator of I/O before the IRP reaches a file system associated with the IRP;

forwarding the first IRP to a first volume filter associated with the meta-data extent;

creating an additional IRP by the first volume filter for each data extent affected by the first IRP;

transmitting each additional IRP to a second volume filter associated with each data extent affected by the first IRP;

allowing each additional IRP to pass through the second volume filter associated with volume filter of each data extent affected by the first IRP; and

returning a response to the first IRP from each second volume filter associated with the at least one data extent originator of I/O.

#### 10. (Canceled)

- 11. (Previously Presented) The method of claim 9 wherein the data extents are located on separate physical disks.
- 12. (Previously Presented) The method of claim 9 wherein the data extents affected by the first IRP are located on separate physical disks.

#### 13. (Canceled)

14. (Previously presented) A computer system for providing a single Data Volume of data storage to users and applications of the computing system, the system comprising:

a plurality of storage clients connected to at least one storage server across a computer network;

a plurality of magnetic disks wherein Data Volumes may be created and virtually presented to said storage clients, each of said Data Volumes having a meta-data extent and at least one data extent, the meta-data extent including a first volume filter adapted to intercept and redirect input/output request packets (IRPs) received from one of the storage clients, before the IRP is received by an associated file system, to a second volume filter associated with the at least one data extent, said first volume filter configured to create an additional IRP for each data extent affected by the IRP; the second volume filter associated with each of the at least one data extent returns a response to the IRP, and wherein the first and second volume filters are implemented above a Basic Volume Manager; and

a central management facility for controlling the at least one storage server;

wherein the meta-data extent is a first logical drive and the at least one data
extent is a second logical drive;

the Data Volume appears as a single storage volume to the users and the applications; and

the meta-data extent comprises configuration information for use in setting up and maintaining the Data Volume.

15. (Original) The computer system of claim 14 wherein the computer network is a fibre channel network.

16. (Original) The computer system of claim 14 wherein each storage client is presented with a virtual disk including at least one Data Volume having a meta-data extent and at least one data extent.

## 17. (Canceled)

- 18. (Previously presented) The computer system of claim 14 wherein the at least one data extent is a plurality of data extents and the IRPs are redirected to the data extents based on which data extents are affected by the IRPs.
- 19. (Original) The computer system of claim 14 wherein each storage client is presented with a particular Data Volume including a meta-data extent and at least one data extent.
- 20. (Original) The computer system of claim 19 wherein the Data Volume is a simple volume.
- 21. (Original) The computer system of claim 19 wherein the Data Volume is a spanned volume.

22. (Original) The computer system of claim 21 wherein the Data Volume includes at least three Basic Volumes and a volume filter is logically disposed above said Basic Volumes.

23. (Previously presented) A volume filter for redirecting input/output request packets (IRPs) sent from an input/output (I/O) originator, the volume filter comprising:

intercepting means for intercepting IRPs sent to a meta-data extent associated with a Basic Volume before the IRP is received by an associated file system;

evaluating means for evaluating IRPs to determine a meta-data extent to handle the IRP;

redirecting means for redirecting the IRPs to at least one data extent associated with at least one other Basic Volume wherein a plurality of data extents are associated with an equal number of Basic Volumes; and

creating means for creating an additional IRP for each data extent affected by a redirected IRP;

wherein the meta-data extent is a first logical drive and the at least one data extent is a second logical drive;

the Data Volume appears as a single storage volume to the users and the applications; and

the meta-data extent comprises configuration information for use in setting up and maintaining the Data Volume.

- 24. (Original) The volume filter of claim 23 wherein the plurality of data extents includes data extents located on separate physical disks.
- 25. (Original) The volume filter of claim 24 wherein the volume filter is logically disposed above the Basic Volumes.